WEST Search History

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DATE: Friday, January 20, 2006

Hide?	Set Name	Query	Hit Count
		DB=PGPB,USPT; PLUR=YES; OP=ADJ	
☐	L9	L4 and (organic acid)	2
☐	L8	L4 and heat$	2
☐	L7	L4 and rinsing	0
☐	L6	L4 and (organic solvent)	0
☐	L5	L4 and (dimethyl acetamide)	0
☐	L4	L3 and cleaning	2
☐	L3	L2 with (organic acid)	2
☐	L2	L1 with (ammonium fluoride)	297
☐	L1	(ceramic parts) or glass or quartz	868159

END OF SEARCH HISTORY

L3: Entry 2 of 2 File: PGPB Jun 27, 2002

DOCUMENT-IDENTIFIER: US 20020078886 A1
TITLE: Silica glass jig for semiconductor industry and method for producing the same

Abstract Paragraph:
A silica glass jig for semiconductor industry, characterized by having, on the surface of the jig, pyramidal projected structures with their cut-off apices and concave portions provided therebetween, and small projections are uniformly distributed thereon; the silica glass jig has a surface with many dimple-form concave portions each having a width of from 20 to 300 .mu.m exist and there are grooves each having a width of from 0.5 to 50 .mu.m at an interval of from 20 to 300 .mu.m, and small projections each having a width of from 1 to 50 .mu.m and having a height of from 0.1 to 10 .mu.m are uniformly distributed between the grooves and in the grooves. A method for producing such is machining the surface of the silica glass jig to form irregularities, and then treating the resulting surface with a treating solution containing hydrogen fluoride and ammonium fluoride; or immersing the silica glass jig in a first processing solution containing hydrogen fluoride, ammonium fluoride, and an organic acid, and then immersing it at least once in a second processing solution, wherein the content of the organic acid is higher than that of the first processing solution.

Summary of Invention Paragraph:
[0016] Alternatively, the present invention provides a method for production of the silica glass jig for semiconductor industry, in which first, a silica glass jig is immersed in a first treating solution containing hydrogen fluoride, ammonium fluoride, and an organic acid, and then the jig is immersed at least once in a second treating solution having a larger content of the organic acid than that of the above-described treating solution, whereby pyramidal projected structures with their cut-off apices and concave portions provided therebetween are formed on the surface of the jig and also small projections are uniformly distributed on them. It is better that the content of hydrogen fluoride in the first treating solution used is from 15 to 50% by mass, the content of ammonium fluoride is from 6 to 30% by mass, and the content of the organic acid is in the range of from 30 to 50% by mass. Also, it is better that the content of hydrogen fluoride in the second treating solution is from 5 to 20% by mass, the content of ammonium fluoride is from 6 to 30% by mass, and the content of the organic acid is in the range of from 40 to 70% by mass, the range of the organic acid is selected such that the range is more than the range thereof in the first treating solution.

CLAIMS:

10. A method for producing a silica glass jig for semiconductor industry by immersing the silica glass jig in a first processing solution containing hydrogen fluoride, ammonium fluoride, and an organic acid, and then immersing it at least once in a second processing solution, wherein the content of the organic acid is higher than that of the first processing solution.

11. A method for producing a silica glass jig for semiconductor industry, described

in claim 10, wherein the first processing solution is an aqueous solution containing from 15 to 50% by mass of hydrogen fluoride, from 6 to 30% by mass of ammonium fluoride, and from 30 to 50% by mass of an organic acid, and the second processing solution is a processing solution containing from 5 to 20% by mass of hydrogen fluoride, from 6 to 30% by mass of ammonium fluoride, and from 40 to 70% by mass of the organic acid.

Previous Doc Next Doc Go to Doc#